UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,508	09/08/2003	Eliezer Zomer		9324

32361 7590 10/02/2006

GREENBERG TRAURIG, LLP
MET LIFE BUILDING
200 PARK AVENUE
NEW YORK, NY 10166

EXAMINER	
KHARE, DEVESH	
ART UNIT	**PAPER NUMBER**
1623	

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/657,508	ZOMER ET AL.	
	Examiner	Art Unit	
	Devesh Khare	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 13-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 6/20/2005.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant's election of the claims of Group II corresponding to claims 13-25 in the reply filed on 09/14/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Claims 1-12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected subject matter.

Claim 13 has been amended.

An action on the merits of claims 13-25 is contained herein below.

Objection

Claims 14-16, 23 and 25 are objected to because of the following informalities:

In claims 14-16, 23 and 25, the abbreviations "5-FU"; "5-FUdR"; "IL-2"; and "IL-12" should be preceded in their first occurrence by the specific identity of the entities said abbreviations are intended to represent in the claims. Thereafter, the use of the abbreviation in the claims will be favorably considered and explicitly understood.

Appropriate correction is required.

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 13-22 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,2-6,7,11 and 14-16 of U.S. Patent No. 6,645,946 ('946); claims 1-10 and 21-25 of U.S. Patent 7,012,068 ('068); and claims 1-5 of U.S. Patent 6,982,255 ('255).

U.S. Patent No. 6,645,946 ('946)

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in each of the application and the '946 patent are directed to substantially the same subject matter, i.e., in the instant claims, the invention is claimed in terms of a method for treating cancer in a subject including those numerous cancers listed in claim 18 comprising administering to a subject the instant admixture having $(((1,4)\text{-linked } \beta\text{-D- mannopyranose})_{17} - ((1,6)\text{-linked-}\beta\text{-D-galactopyranose})_{10})_{12})$ (galactomannan) and a chemotherapeutic agent in a suitable ratio in a pharmaceutically acceptable carrier, while in the '946 patent it is claimed in terms of a method of reducing the toxic side effects of a chemotherapeutic agent in a subject comprising administering the mixture having galactomannan and a chemotherapeutic agent in an effective amount ratio in a formulation form. The '946 patent discloses that the toxic side effects of a chemotherapeutic drug can be reduced by a polysaccharide galactomannan in the treatment of cancer (col.2, lines 15-24). Those of skill in this art would have recognized that chemotherapeutic agents of claim

14 can be used in the treatment of cancers listed in claim 18 and their toxic side effects may be reduced by combining galactomannan with said chemotherapeutic agents. It would have been obvious to one having ordinary skill in this art, at the time the claimed invention was made to use the method of the '946 patent which is drawn in terms of a method of reducing the toxic side effects of a chemotherapeutic agent in a subject comprising administering the mixture having galactomannan and a chemotherapeutic agent in a formulation, in the treatment of cancer with reduced toxic side effects from the chemotherapeutic agents. One of ordinary skill in the art would be motivated to use the admixture of galactomannan and a chemotherapeutic agent in the cancer treatment since the beneficial effects of said chemotherapeutic agent and a polysaccharide galactomannan is individually taught in the prior art.

U.S. Patent 7,012,068 ('068)

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in each of the application and the '068 patent are directed to substantially the same subject matter, i.e., in the instant claims, the invention is claimed in terms of a method for treating cancer in a subject including those numerous cancers listed in claim 18 comprising administering the instant admixture having $(((1,4)\text{-linked } \beta\text{-D- mannopyranose})_{17} - ((1,6)\text{-linked-}\beta\text{-D-galactopyranose})_{10})_{12}$ (galactomannan) and a chemotherapeutic agent in a suitable ratio in a pharmaceutically acceptable carrier, while in the '068 patent it is claimed in terms of a method for treating cancer comprising administering to a subject the mixture having galactomannan and a

chemotherapeutic agent in a suitable ratio in a formulation form. The '068 patent discloses that the toxic side effects of a chemotherapeutic drug can be reduced by a polysaccharide galactomannan in the treatment of cancer (col.1, line 65 to col.2, line 5). It is noted that the '068 patent claimed the molecularweight of galactomannan in the range of 20,000-600,000 D which is an inherent property of the instant used galactomannan. The therapeutic agent adriamycin of the '068 patent may not be in the list of instant chemotherapeutic agents but it would be obvious to one skilled in this art to try adriamycin due to its inherent property of curing cancer. Those of skill in this art would have recognized that chemotherapeutic agents of claim 14 can be used in the treatment of cancers listed in claim 18 and their toxic side effects may be reduced by combining galactomannan with said chemotherapeutic agents. It would have been obvious to one having ordinary skill in this art, at the time the claimed invention was made to use the method of the '068 patent which is drawn in terms of a method for treating cancer comprising administering to a subject the mixture having galactomannan and a chemotherapeutic agent in a formulation form, in the treatment of cancer with reduced toxic side effects from the chemotherapeutic agents. One of ordinary skill in the art would be motivated to use the admixture of galactomannan and a chemotherapeutic agent in the cancer treatment since the beneficial effects of said chemotherapeutic agent and a polysaccharide galactomannan is individually taught in the prior art.

U.S. Patent 6,982,255 ('255)

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in each of the application and the '255 patent are directed to substantially the same subject matter, i.e., in the instant claims, the invention is claimed in terms of a method for treating cancer in a subject including those numerous cancers listed in claim 18 comprising administering the instant admixture having $(((1,4)\text{-linked } \beta\text{-D- mannopyranose})_{17} - ((1,6)\text{-linked-}\beta\text{-D-galactopyranose})_{10})_{12}$ (galactomannan) and a chemotherapeutic agent in a suitable ratio in a pharmaceutically acceptable carrier, while in the '255 patent it is claimed in terms of a method for treating cancer comprising administering to a subject the mixture having galactomannan and a chemotherapeutic agent in an effective dose ratio in a formulation form. The '255 patent discloses that the toxic side effects of a chemotherapeutic drug can be reduced by a polysaccharide galactomannan in the treatment of cancer (col.2, lines 45-59). It is noted that the '255 patent claimed the molecular weight of galactomannan in the range of 83,000-215,000 D which is an inherent property of the instant used galactomannan. The therapeutic agent adriamycin of the '255 patent may not be in the list of instant chemotherapeutic agents but it would be obvious to one skilled in this art to try adriamycin due to its inherent property of curing cancer. Those of skill in this art would have recognized that chemotherapeutic agents of claim 14 can be used in the treatment of cancers listed in claim 18 and their toxic side effects may be reduced by combining galactomannan with said chemotherapeutic agents. It would have been obvious to one having ordinary skill in this art, at the time the claimed invention was made to use the method of the '255 patent which is drawn in terms of a

method for treating cancer comprising administering to a subject the mixture having galactomannan and a chemotherapeutic agent in a formulation form, in the treatment of cancer with reduced toxic side effects from the chemotherapeutic agents. One of ordinary skill in the art would be motivated to use the admixture of galactomannan and a chemotherapeutic agent in the cancer treatment since the beneficial effects of said chemotherapeutic agent and a polysaccharide galactomannan is individually taught in the prior art.

The examiner notes the instant claims and the **'946; '068 and '255 patents** of applicants do indeed substantially overlap therefore this obviousness-type double patenting rejection is necessary to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.

Therefore the claims are co-extensive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

make and/or use the invention commensurate in **scope** with the claim with respect to treating **any** cancer in a subject broadly in claims 13-17 and 19-25, and/or those numerous cancers listed in claim 18.

Note that **any** cancer would reasonably broadly encompass those known and unknown cancers as of the instant filing date, as well as those future known cancers yet to be discovered and diagnosed.

The instant specification fails to provide information that would allow the skilled artisan to fully practice the instant invention without ***undue experimentation***. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

(1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

1. The nature of the invention: The instant invention pertains to a method for treating cancer in a subject including those numerous cancers listed in claim 18 comprising administering the instant admixture having (((1,4)-linked β-D-mannopyranose)$_{17}$ – ((1,6)-linked-β-D-galactopyranose)$_{10}$)$_{12}$) (galactomannan) and a chemotherapeutic agent in a pharmaceutically acceptable carrier.

2. The state of the prior art: The skilled artisan would view cancers as a group of maladies (cancers) not treatable with one medicament or therapeutic regimen. Treatment efforts and efforts to cure all cancers have produced only isolated identifiable positive results. See *In re Application of Hozumi et al.*, 226 USPQ 353. Moreover, it is well known that so far no single chemotherapeutic agent has been found to be useful in the treatment of **all** cancers, or even useful in the treatment of all types of breast cancers; and colon cancers; and prostate cancers; and leukemias. For example, breast cancers and leukemia do not share a common cause and differ in their methods of treatment, i.e., breast cancers are routinely with estrogens, antiestrogens, and/or androgens, unlike leukemia which is routinely treated with l-asparaginase, daunorubicin, and purine analogs.

3. The predictability of the art, and the breadth of the claims: Note that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. *In re Fisher*, 166 USPQ 18 indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. Moreover, it is known that repeated therapeutic failures, after promising in-vitro test results, suggest to the skilled artisan that claims based on in-vitro data, directed to treating cancer generally, are highly unpredictable, as taught in Trisha Gura's article in *Science*, November, 1997 (PTO-892):

"[T]he institute started by pulling together mouse models of three tumors: a leukemia, which affects blood cells; a sarcoma, which arise in bone, muscle, or connective tissue; and carcinoma, the most common cells and includes such major killers as breast, colon, and lung cancers. Initially, many of the agents tested in these models appeared to do

well. However, most worked against blood cancers such as leukemia and lymphoma, as opposed to the more common solid tumors. And when tested in human cancer patients, most of these compounds failed to live up to their early promise." (emphasis added, see for example, the middle column of the article).

Based on the known teachings of the cancer treatment such as in Trisha Gura's reference, one of skill in the art would recognize that it is highly unpredictable in regard to the treatment in the instant case, including treating numerous and various cancers: chronic leukemia, ovarian carcinomas, prostate cancer, bladder cancer, ovarian carcinomas, stomach cancer, rectal cancer, pancreatic cancer, throat cancer, sarcoma, gastrointestinal cancer, breast cancer, melanoma, acute and Kaposi's sarcoma by administering the very same admixture.

4. The presence of absence of working examples: only 5-FU and 5-FUdR in presence of galactomannan was tested in athymic MCr-nu mice with human colon tumor COLO 205 (see the Examples starting at page 29 of the specification). Thus, the evidence in the examples is **not** commensurate in **scope** with the claimed invention and does not demonstrate criticality of a claimed range of said admixture and numerous and various cancers in the claimed method. See MPEP § 716.02(d).

Further, those unknown or future known cancers must require additional or future research to discover and diagnose. Therefore, the skilled artisan has to exercise **undue experimentation** to practice the instant invention.

Thus, the specification fails to provide sufficient support of the broad use of the said admixture for treating numerous and various cancers recited in the instant claims. As a result, necessitating one of skill to perform an exhaustive search for the

embodiments of chemotherapeutic agents in the presence of galactomannan and cancers encompassed by the instant claims suitable to practice the claimed invention.

Genentech, 108 F.3d at 1366, states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the *Wands* factor and *In re Fisher* (CCPA 1970) discussed above, to practice the claimed invention herein, a person of skill in the art would have to engage in *undue experimentation* to test an admixture comprising a broad list of chemotherapeutic agents in the presence of galactomannan and cancers encompassed in the instant claims, with no assurance of success.

35 U.S.C. 112, second paragraph rejection

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19-25 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

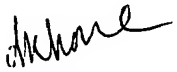
(A) In all occurrences of the presented claims, in the absence of the specific ratio between galactomannan and other agents, render the claims indefinite wherein

applicant fails to articulate the specific ratio, requisite to identifying the admixture having galactomannan and other agents.

(B) The term "suitable" is a relative term, which renders the claims indefinite in all occurrences. The term "suitable" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Devesh Khare whose telephone number is (571)272-0653. The examiner can normally be reached on Monday to Friday from 8:00 to 4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang, Supervisory Patent Examiner, Art Unit 1623 can be reached at (571)272-0627. The official fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Devesh Khare, Ph.D.,J.D.
Art Unit 1623
September 27, 2006